

THE WILD OR CANADIAN RICE,
ZIZANIA AQUATICA.

BY F. ABBOTT, JUN.

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With reference to this plant, a liberal supply of the seeds of which was received from the Chamber of Agriculture, Washington, United States of America, about a month ago, I would offer the following notes with a view of pointing out the desirability of endeavouring to acclimatise the plant in Tasmania.

The plant is one that would be of great value if introduced in sufficient quantity to become acclimatised in our Lake districts, which are peculiarly suited to its requirements. It not only supplies a great amount of sustenance to water fowl of all kinds, but is a valuable food plant, and affords excellent fodder for cattle. It has also of late years come into repute as an excellent paper making material.

The plant is one that has been known for many years but has not been successfully acclimatised anywhere that I am aware of, and indeed it would not appear that any great efforts have been made for its acclimatisation. It has been from time to time introduced into England, and various botanical gardens in Europe, but does not appear to have escaped from cultivation in such places, and has usually been lost sight of in a few years time.

The late Sir Joseph Banks introduced the plant many years ago, and it reproduced itself in a lake on his estate for several years in succession, but finally was lost sight of during some extensive alterations to the property. Last year it was reported in the *Gardeners' Chronicle* as being under cultivation at the Royal Gardens, Kew, in London, raised from seeds introduced in a damp state, but as yet it has not escaped from house cultures.

There is great difficulty in getting the seeds to germinate when introduced in a dry state, and it is recommended to have them sent in damp clay, when germination is almost a certainty.

The seed just received is to all appearance fresh, and as a considerable portion of it has been sown at the Gardens, and the remainder kept immersed for distribution to any persons having suitable opportunities to give it a fair trial, a short time will suffice to prove whether any of it has retained its germinating power.

The following description of the plant is taken from the columns

of the *Gardeners' Chronicle*, more especially the volume for 1874 :—

Zizania aquatica is common to the North American Continent, in the lakes, swamps, ponds, and shallow streams of which all over the country it produces an incredible amount of herbage.

The pertinacity with which immense flocks of wild fowl haunt the localities where this plant grows naturally, is well known, and whenever the plant gets destroyed from any cause, the game diminishes as a consequence.

The plant grows in vast beds in still waters, having a depth of from 3 to 8 feet, and a deposit of mud or sand, in which the plant luxuriates. Where there is little current, these beds cover a vast area. When the rice begins to show the tender green blades above the water, the lakes seem to be studded with low verdant islands.

The plant usually grows 7 or 8 feet high, but sometimes as much as 10 or 12 feet, the leaves attaining a length of 10 or 12 feet. It has a panicle with female flowers above and male below.

In the month of September in Canada the grains are fully ripe; they are so loosely enclosed between the bearded husks that they fall out at the slightest puff of wind, and the harvest can only be continued for a few days after the maturity of the crop.

The stalk and the branches or ears that have the seed resemble oats both in appearance and manner of growth; the stalk being full of joints and rising from two to four feet above the water, and oftentimes much more.

The squaws collect the seed by paddling through the rice-beds with a stick in one hand and a covered paddle in the other, striking the heads down into the canoe, into which the ripe grain falls. In this manner an Indian squaw will collect from five to ten bushels per day. After gathering, it is dried in the sun or over slow fires by the Indians, and forms their principal winter support.

It is considered by many to be superior in taste, being much sweeter and far more nutritious than ordinary rice. When boiled, and left to cool, it forms a consistent mass, like good wheat bread. It is very palatable boiled as ordinary rice, but the outer skin being dark coloured it is not so inviting in appearance as Carolina rice. In addition to the ordinary way of cooking it, it is also parched by being heated in pots over slow fires until it bursts and shows the white flowery part within the dark skin; thus prepared it is used in soups and is also eaten by the Indians when on long journeys.

The grain itself is an article of commerce in Canada where it is sold in the stores at about 10s. per bushel. In addition to the value of the plant as a food producer, it has comparatively recently been discovered to be a first rate material for the manufacture of white paper, especially the kinds for newspapers, books,

and printing purposes generally. It is quite equal to any prepared from Esparto grass or rags, and has the merit of receiving a very clear impression from the printer. Owing to the freight upon the raw material being charged upon the space occupied and not on the weight, the expense of carriage is so high as to be almost prohibitive. One ton of *Zizania* straw occupies about 6 tons of space, so that commercially regarded *Zizania* in a raw state is too bulky for importation with a view to profit.

To get over this difficulty a company was started in Canada (1874) for the purpose of reducing the material to "half-stuff" in which state it can be exported to England at a profit to both the company and the manufacturer. The company has obtained the concession of the whole of the province of Ontario, the only one in which the plant grows to any great extent. One hundred thousand (100,000) tons of the material are assured annually, and it is said, as the plant is a natural production, and the cutting is to be effected by a machine that will improve rather than injure the growth, that there is little chance of there being any diminution in the quantity procurable.

The density of a *Zizania* grove is so great that the natives frequently fly to it as a place of shelter in times of peril, but sometimes the growth is so thick that the canoes cannot penetrate it.

From the foregoing description it will be seen that the plant is of more than ordinary value as a subject for acclimatisation in Tasmania. It is one that if fairly introduced would continue to perpetuate itself, as being a water plant it would not be liable to be destroyed by browsing animals. From the fact, too, of the harvest being of such short duration, a considerable portion of the seed would naturally fall into the water and escape being destroyed by water fowl, and thus its perpetuation would be assured. But during the first stages of acclimatisation care should be taken to sow the seed in situations not subject to the visitation of water fowl nor liable to the browsing of animals, as in such situations the chances of success would, of course, be greater if both seed and plants remained for some time unmolested.

In a colony like Tasmania, so destitute of natural grain producing plants, the introduction of the *Zizania* would probably be of great future benefit, for not only would it tend to materially increase the amount of natural game, but would also produce an abundance of wholesome, nutritious food, which would be of great assistance to parties exploring in the interior of the colony; as at certain seasons they would be able to stow the grain for future use.

In missionary and other expeditions in Canada the *Zizania* frequently forms the principal support of the whole party, and it is spoken of by all who have partaken of it as being not only very nutritious but as being highly agreeable to the taste.

The plant is regarded as being very hardy, being subject to great vicissitudes of climate in its native country, so much so that

it is regarded by some as likely to become the natural bread plant of the North.

I have for several years been endeavouring to obtain fertile seeds of this plant. The seed just received is no doubt sent in response to an application made to the Chamber of Agriculture at Washington 2 years ago. In the event of none of the seed now on hand germinating it is my intention to endeavour to obtain a supply direct from Canada, in damp clay, next year, as I consider the plant well worth any expense or exertion that may be necessary for its introduction.